

# ESTIMATES OF THE USE OF FOREST SERVICE LANDS FOR HUNTING<sup>1</sup>

by

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April 1990

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<sup>1</sup>This is the final report for the project funded by USFS Participating Agreement No. 89-PA-041.

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## INTRODUCTION

As the demand for various and sometimes competing uses of public lands increases, we have seen a heightened interest on the part of public agencies in identifying and estimating the values the public places on these uses. Recently, the U.S. Forest Service and the Bureau of Land Management desired information on the amount of nonconsumptive wildlife use occurring on lands they managed. The Human Dimensions Research Unit (HDRU), Department of Natural Resources at Cornell University, performed an analysis of the 1985 National Survey of Fishing, Hunting, and Wildlife-associated Recreation to obtain this information (Connelly and Brown 1988). To complement the information on nonconsumptive use, the Forest Service requested analogous information on the use of Forest Service lands for hunting. That information is the subject of this report.

The 1985 National Survey again provided the most current and comprehensive estimates of hunting use.<sup>2</sup> However, the survey does not provide precise estimates of the use of Forest Service lands for hunting, because it did not elicit exact identification of the ownership of federal lands hunted.

The HDRU performed an analysis of the 1985 National Survey to obtain estimates of the amount of use on Forest Service lands for hunting. The principal objective of the analysis was to prorate the number of days and hours spent hunting for big game, small game, other game, and migratory birds, separately and in total, to Forest Service lands in each state where such land exists and by Forest Service region. Additional analysis focused on

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<sup>2</sup>The authors would like to acknowledge Warren Fisher and the U.S Fish and Wildlife Service for providing us with tape copies of the data from the 1985 Survey.

estimating the value of deer, elk, and waterfowl hunting on Forest Service lands using the "contingent value" questions in the 1985 National Survey.

## METHODS

### Estimating the Number of Days and Hours Spent Hunting on Forest Service Land

Each of the 4 types of hunting (big game, small game, other game, and migratory bird) was analyzed separately using the method outlined below. Total hunting days and hours were then calculated by summing the 4 types.

For each type of hunting, we selected from all respondents who had done that type of hunting only those people who had (1) hunted federal lands, (2) hunted public lands that they were unable to classify as to state, federal or local land, or (3) hunted land that they were unsure as to whether it was publicly or privately owned. These categories encompass all possible federal land users. The use of Forest Service land was then estimated on a state by state basis. Because questions 7s1, 8s1, 9t1, and 10s1 (Form FH-3 of the 1985 National Survey; for examples of exact wording of questions see Appendix A) do not produce exact identification of the ownership of federal lands hunted, it was necessary to infer the amount of use from ownership data and public land statistics indicating the acreage of federal land available in each state for hunting. The majority of respondents indicated the number of days spent hunting on federal land. For these cases, a federal land ratio was applied to estimate the days/hours spent hunting on Forest Service land. The federal land ratio was derived as follows:

The acreage of Forest Service land open to each type of hunting was calculated, and compared in a ratio with the acreage of other federal land open to each type of hunting. Other federal lands included in this ratio were lands managed by the Bureau of Land Management, Bureau of Reclamation, Corps of Engineers, Fish and Wildlife Service, National Parks Service, and Tennessee Valley Authority. For those respondents who knew they hunted federal land but were unsure of the number of days, the federal land ratio was applied to the total days spent doing that type of hunting in that state.

For people who had visited public land but were unsure of the type (federal, state, or local), a ratio of federal lands to other nonfederal public lands open to each type of hunting was applied prior to applying the previous federal lands ratio. For this second ratio, there was no comprehensive information on state and local land open to hunting. We used the assumption that all state lands classified as fish and wildlife management areas, forests, conservation lands and public reserved lots were open to hunting. Local public land acreage was assumed to equal 50% of state land area, but only half of local public land was assumed to be open to hunting. This method is conservative for estimating Forest Service land use because it bolsters the nonfederal side of the ratio somewhat in that not all state land in the categories chosen is open to hunting and little local land is available for hunting. For those respondents who were unsure of the number of days spent on public land, this ratio was applied to the total days spent doing that type of hunting in that state. For the few respondents who were unsure about the number of days spent hunting on federal land and also unsure of the number of days spent hunting on public land, only 1 calculation was made using the federal land ratio and total days hunting.

For the approximately 1% of cases where the respondent was unsure if the land was publicly or privately owned, a ratio of public land open to hunting to private land open to hunting was applied previous to applying the above 2 ratios to the total days spent hunting for that type of game. The public land side of the ratio was calculated by summing the acreage of all federal, state and local land open for each type of hunting, using the same assumptions as for the above ratios. Private land area was calculated by subtracting all identifiable public land, crop land, rural farmsteads, rural roads, and an approximation of urban area (based on 1982 land-use statistics) from total land area (Frey and Hexem 1985). Therefore, private land area consisted of grassland, pasture, range, forests, or otherwise vacant land.

The ratios were calculated on a state-by-state basis and applied to the 1985 National Survey data. The results in terms of days and hours spent hunting are presented on a state-by-state basis where Forest Service lands exist and the sample size was sufficient to provide reasonable estimates. Ninety-five percent confidence limits are presented to give an indication of the accuracy of the results.

#### Estimating the Value of Deer, Elk, and Waterfowl Hunting on Forest Service Land

Analysis of the "contingent value" questions for deer, elk, and waterfowl (questions 13, 14, and 15, Form FH-3, see Appendix A for an example of the exact wording) was conducted using the procedures outlined in "Net Economic Recreation Values for Deer and Waterfowl Hunting and Trout Fishing, 1980" by Brown and Hay (1987). The first part of this procedure involved excluding from the analysis hunters whose costs were considered out of range.

Those who were willing to pay an unlimited amount were excluded as well as those who were not willing to pay more than what they actually did pay.

A maximum allowable willingness-to-pay per day was also determined for specified species. The allowable daily maximum was set at \$300 for deer hunting, \$600 for elk hunting, and \$400 for waterfowl hunting. Between 3% and 7% of the sample were excluded because their stated willingness to pay exceeded these maxima. These percentages were similar to those used by Brown and Hay (1987). Net economic value was then calculated by subtracting each hunter's current cost per trip from the greatest cost they were willing to pay, dividing that by the average number of days per trip to get a per day cost, and then dividing that by 2 to get net economic value per day.

The final step in the analysis was to produce estimates of the total value of deer, elk, and waterfowl hunting on Forest Service lands. The net economic value per day (and its associated 95% confidence interval) was multiplied by an estimate of the number of days spent hunting deer, elk, or waterfowl on Forest Service lands. To estimate the number of days spent hunting deer, elk or waterfowl on Forest Service lands, the number of days spent hunting big game or migratory birds on Forest Service lands was multiplied by a ratio of number of days spent deer, elk, or waterfowl hunting divided by total days spent big game or migratory bird hunting. For example, to estimate the number of days spent hunting deer on Forest Service land, the number of days spent big game hunting on Forest Service land was multiplied by the number of days spent deer hunting on all land divided by the number of days spent big game hunting on all land.

The net economic value per day estimate was not obtained in the 1985 survey for each state visited, but rather as a respondent's average of all

trips to all states visited. Therefore, it was necessary to use an overall average net economic value for people visiting each state to estimate the value of each type of hunting on Forest Service land by state and by Forest Service region where that type of hunting was permitted.

## RESULTS AND DISCUSSION

Tables 1 through 8 detail the estimated number of days/hours spent hunting for big game, small game, other game, and migratory birds on Forest Service lands in 1985. Results are presented for each state; states with small sample sizes in the 1985 National Survey have wide confidence intervals. Sample sizes were too small for meaningful analysis of other game hunting by state; only analysis by Forest Service region is presented. Presenting results by Forest Service region for all types of hunting bolsters the sample size and reduces the confidence intervals. This is particularly helpful in the Eastern and Southern regions, where many states have small sample sizes.

The summation of the 4 types of hunting are shown in Table 9 for days and Table 10 for hours. The Southern and Eastern regions had the greatest amount of use with over 8 million days each.

The average net economic value per day for deer, elk and waterfowl hunting was calculated for each state and Forest Service region (Tables 11 through 14). The net economic values represent the average amount people are willing to pay above current costs. Again, confidence intervals are wide for states with small sample sizes.

Tables 15 and 16 detail the estimated number of days spent deer, elk, and waterfowl hunting for states and Forest Service regions where each of

these types of hunting occurred on Forest Service lands. These estimates of total days were multiplied by the net economic values per day to get estimates of total value associated with hunting on Forest Service lands. These estimates are presented in Tables 17 through 19. The total net economic value for deer hunting on Forest Service lands was over \$365 million; elk hunting was approximately \$62.5 million, and waterfowl hunting was \$53.7 million.

The estimates provided in this report testify to the popularity of hunting on Forest Service lands; almost 28 million hunter days occurred in 1985. Over half of these days were spent hunting for big game, primarily deer. The values placed on hunting were also quite large, as reported above. This information will be useful for planning by the Forest Service along with the earlier Cornell University report on estimates of nonconsumptive wildlife use. These estimates derived from the 1985 USFWS survey have the advantage of (1) being derived in a consistent manner across states and regions, and (2) being derived from the latest primary data source available.



Table 1. Estimated Number of Days Spent Hunting for Big Game on Forest Service Lands in 1985, in Total, by Forest Service Region, and by State.

<u>Region/State</u>	<u>Days</u>	<u>± 95% Confidence Interval</u>
<u>Northern, Rocky Mountain, and Intermountain Region</u>	2,960,281	225,127
Colorado	688,395	111,330
Idaho	697,400	113,151
Kansas	*	*
Montana	594,673	87,923
Nebraska	48,376	20,818
Nevada	17,000	2,804
North Dakota	82,915	28,273
South Dakota	272,338	74,238
Utah	307,413	41,964
Wyoming	249,054	68,955
<u>Southwestern Region</u>	518,769	140,498
Arizona	415,801	115,164
New Mexico	165,968	71,451
<u>Pacific Southwest Region</u>	735,065	211,065
California	735,065	211,065
<u>Pacific Northwest Region</u>	1,782,476	227,891
Oregon	797,669	117,688
Washington	984,807	182,193
<u>Eastern Region</u>	4,379,699	551,896
Illinois	*	*
Indiana	108,963	61,457
Maine	42,484	19,023
Michigan	1,069,851	253,061
Minnesota	288,857	126,586
Missouri	519,835	149,715
New Hampshire	189,387	176,034
New York	30,549	29,240
Ohio	138,174	62,140
Pennsylvania	660,150	254,593
Vermont	87,800	21,774
West Virginia	545,274	153,131
Wisconsin	675,997	249,649



Table 1 - continued

<u>Region/State</u>	<u>Days</u>	<u>± 95% Confidence Interval</u>
<u>Southern Region</u>	4,715,026	713,936
Alabama	260,879	95,907
Arkansas	623,916	202,586
Florida	625,271	444,404
Georgia	332,836	181,159
Kentucky	56,922	28,792
Louisiana	329,646	107,094
Mississippi	474,707	156,470
North Carolina	360,384	119,901
Oklahoma	48,899	28,545
South Carolina	267,762	120,991
Tennessee	130,064	52,969
Texas	163,216	120,798
Virginia	1,040,523	351,040
<u>Alaska Region</u>	25,516	7,011
<u>National Forest Total</u>	15,179,834	1,015,562

\*Sample size was considered too small for an accurate estimate or confidence interval was greater than the estimate.

Table 2. Estimated Number of Visitor Hours Spent Hunting for Big Game on Forest Service Lands in 1985, in Total, by Forest Service Region, and by State.

<u>Region/State</u>	<u>Visitor Hours</u>	<u>± 95% Confidence Interval</u>
<u>Northern, Rocky Mountain, and Intermountain Region</u>	23,060,647	1,999,003
Colorado	5,746,960	937,986
Idaho	5,285,370	965,544
Kansas	*	*
Montana	4,314,048	636,167
Nebraska	351,384	176,099
Nevada	131,363	21,952
North Dakota	481,944	158,597
South Dakota	2,125,566	892,711
Utah	2,363,466	343,229
Wyoming	2,250,187	725,622
<u>Southwestern Region</u>	4,313,291	1,080,506
Arizona	3,010,760	89,116
New Mexico	1,302,531	541,972
<u>Pacific Southwest Region</u>	5,436,340	1,631,458
California	5,436,340	1,631,458
<u>Pacific Northwest Region</u>	12,192,662	1,623,346
Oregon	5,733,542	917,554
Washington	6,459,119	1,271,033
<u>Eastern Region</u>	28,608,434	3,726,486
Illinois	*	*
Indiana	715,285	476,656
Maine	229,890	94,199
Michigan	7,247,712	1,739,184
Minnesota	2,157,222	1,216,401
Missouri	2,991,720	790,928
New Hampshire	877,327	411,081
New York	*	*
Ohio	963,122	475,928
Pennsylvania	4,694,247	2,099,023
Vermont	506,421	136,798
West Virginia	4,023,487	1,150,043
Wisconsin	3,826,637	1,327,520

Table 2 - continued

<u>Region/State</u>	<u>Visitor Hours</u>	<u>± 95% Confidence Interval</u>
<u>Southern Region</u>	31,596,716	4,841,721
Alabama	1,705,746	609,655
Arkansas	4,418,167	1,808,615
Florida	3,882,392	2,346,277
Georgia	1,771,247	933,544
Kentucky	396,103	182,019
Louisiana	2,050,375	619,414
Mississippi	2,826,947	897,602
North Carolina	2,617,664	1,038,951
Oklahoma	307,776	197,519
South Carolina	2,095,768	1,094,928
Tennessee	929,814	469,246
Texas	1,076,940	788,501
Virginia	7,517,774	2,828,208
<u>Alaska Region</u>	201,584	67,793
<u>National Forest Total</u>	105,409,674	7,080,618

\*Sample size was considered too small for an accurate estimate or confidence interval was greater than the estimate.

Table 3. Estimated Number of Days Spent Hunting for Small Game on Forest Service Lands in 1985, in Total, by Forest Service Region, and by State.

<u>Region/State</u>	<u>Days</u>	<u>± 95% Confidence Interval</u>
<u>Northern, Rocky Mountain, and Intermountain Region</u>	1,082,014	157,297
Colorado	163,792	55,375
Idaho	273,212	82,923
Kansas	17,241	9,030
Montana	131,856	58,611
Nebraska	80,689	51,576
Nevada	*	*
North Dakota	73,102	19,261
South Dakota	137,433	39,471
Utah	70,439	17,406
Wyoming	74,782	27,819
<u>Southwestern Region</u>	543,170	265,325
Arizona	478,988	259,627
New Mexico	64,182	38,125
<u>Pacific Southwest Region</u>	574,252	149,658
California	574,252	149,658
<u>Pacific Northwest Region</u>	654,728	167,422
Oregon	156,990	60,577
Washington	497,738	151,950
<u>Eastern Region</u>	2,787,503	560,677
Illinois	*	*
Indiana	121,710	56,441
Maine	16,440	12,879
Michigan	681,406	389,281
Minnesota	371,058	163,546
Missouri	297,029	137,781
New Hampshire	63,478	29,897
New York	20,964	18,060
Ohio	104,331	56,280
Pennsylvania	233,594	140,741
Vermont	73,007	48,267
West Virginia	204,246	71,813
Wisconsin	441,429	214,858

Table 3 - continued

<u>Region/State</u>	<u>Days</u>	<u>± 95% Confidence Interval</u>
<u>Southern Region</u>	2,131,134	327,434
Alabama	84,140	44,671
Arkansas	332,046	130,089
Florida	162,924	97,043
Georgia	41,618	41,037
Kentucky	81,935	31,933
Louisiana	282,177	104,175
Mississippi	112,638	60,307
North Carolina	164,973	81,082
Oklahoma	44,310	23,407
South Carolina	52,381	34,133
Tennessee	80,960	36,547
Texas	155,756	100,000
Virginia	535,276	181,468
<u>Alaska Region</u>	11,841	5,516
<u>National Forest Total</u>	7,784,642	769,710

\*Sample size was considered too small for an accurate estimate or confidence interval was greater than the estimate.

Table 4. Estimated Number of Visitor Hours Spent Hunting for Small Game on Forest Service Lands in 1985, in Total, by Forest Service Region, and by State.

<u>Region/State</u>	<u>Visitor Hours</u>	<u>± 95% Confidence Interval</u>
<u>Northern, Rocky Mountain, and Intermountain Region</u>	5,827,765	1,010,965
Colorado	962,019	355,968
Idaho	1,192,661	338,506
Kansas	101,954	63,890
Montana	660,564	297,424
Nebraska	499,845	292,750
Nevada	*	*
North Dakota	385,036	113,144
South Dakota	704,873	259,785
Utah	328,289	80,187
Wyoming	469,687	218,707
<u>Southwestern Region</u>	2,240,651	1,239,322
Arizona	1,980,108	1,224,086
New Mexico	260,543	109,391
<u>Pacific Southwest Region</u>	2,907,598	813,990
California	2,907,598	813,990
<u>Pacific Northwest Region</u>	2,938,622	779,190
Oregon	774,994	373,016
Washington	2,163,668	670,703
<u>Eastern Region</u>	13,045,397	3,289,224
Illinois	*	*
Indiana	675,768	348,178
Maine	43,680	31,263
Michigan	3,520,551	2,556,815
Minnesota	1,799,177	1,032,527
Missouri	1,009,203	399,460
New Hampshire	294,235	131,923
New York	119,450	110,467
Ohio	528,913	333,323
Pennsylvania	1,022,539	690,746
Vermont	337,152	266,998
West Virginia	1,055,919	420,395
Wisconsin	1,777,045	1,052,468

Table 4 - continued

<u>Region/State</u>	<u>Visitor Hours</u>	<u>± 95% Confidence Interval</u>
<u>Southern Region</u>	9,930,695	1,783,076
Alabama	384,608	184,173
Arkansas	1,433,422	486,359
Florida	734,630	557,918
Georgia	*	*
Kentucky	409,689	169,626
Louisiana	1,334,120	564,194
Mississippi	600,120	383,644
North Carolina	764,122	428,086
Oklahoma	171,622	79,815
South Carolina	262,156	188,072
Tennessee	407,114	198,105
Texas	856,612	820,425
Virginia	2,296,646	930,572
<u>Alaska Region</u>	63,600	50,318
 National Forest Total	 36,954,368	 4,286,602

\*Sample size was considered too small for an accurate estimate or confidence interval was greater than the estimate.

Table 5. Estimated Number of Days Spent Hunting for Migratory Birds on Forest Service Lands in 1985, in Total, by Forest Service Region, and by State.

<u>Region/State</u>	<u>Days</u>	<u>± 95% Confidence Interval</u>
<u>Northern, Rocky Mountain, and Intermountain Region</u>	481,398	118,052
Colorado	49,015	27,335
Idaho	138,110	61,569
Kansas	5,205	2,609
Montana	21,510	10,424
Nebraska	60,456	51,806
Nevada	*	*
North Dakota	54,535	18,022
South Dakota	42,852	19,474
Utah	47,284	28,937
Wyoming	20,813	10,825
<u>Southwestern Region</u>	142,000	46,623
Arizona	124,401	42,793
New Mexico	17,599	11,294
<u>Pacific Southwest Region</u>	431,110	249,735
California	431,110	249,735
<u>Pacific Northwest Region</u>	270,009	193,193
Oregon	62,004	25,459
Washington	208,004	189,678
<u>Eastern Region</u>	902,500	243,043
Illinois	154,669	100,980
Indiana	*	*
Maine	7,460	6,702
Michigan	89,316	66,721
Minnesota	211,998	95,337
Missouri	88,210	38,446
New Hampshire	60,537	54,028
New York	*	*
Ohio	*	*
Pennsylvania	62,035	45,233
Vermont	11,279	9,036
West Virginia	*	*
Wisconsin	183,444	164,055



Table 5 - continued

<u>Region/State</u>	<u>Days</u>	<u>± 95% Confidence Interval</u>
<u>Southern Region</u>	840,229	222,597
Alabama	30,195	23,995
Arkansas	121,010	70,278
Florida	211,215	170,005
Georgia	*	*
Kentucky	*	*
Louisiana	87,167	42,468
Mississippi	67,740	45,273
North Carolina	41,961	28,389
Oklahoma	19,163	11,371
South Carolina	79,084	49,040
Tennessee	28,621	23,256
Texas	79,971	39,301
Virginia	*	*
<u>Alaska Region</u>	6,949	2,716
<u>National Forest Total</u>	3,074,195	485,984

\*Sample size was considered too small for an accurate estimate or confidence interval was greater than the estimate.

Table 6. Estimated Number of Visitor Hours Spent Hunting for Migratory Birds on Forest Service Lands in 1985, in Total, by Forest Service Region, and by State.

<u>Region/State</u>	<u>Visitor Hours</u>	<u>± 95% Confidence Interval</u>
<u>Northern, Rocky Mountain, and Intermountain Region</u>	3,031,378	994,421
Colorado	300,415	199,082
Idaho	767,781	390,149
Kansas	28,479	15,974
Montana	113,135	50,440
Nebraska	*	*
Nevada	*	*
North Dakota	325,470	131,516
South Dakota	250,658	106,541
Utah	231,885	159,886
Wyoming	115,318	73,530
<u>Southwestern Region</u>	694,509	292,810
Arizona	611,159	279,701
New Mexico	83,350	48,878
<u>Pacific Southwest Region</u>	3,545,285	3,267,482
California	3,545,285	3,267,482
<u>Pacific Northwest Region</u>	1,513,254	1,051,834
Oregon	310,278	121,463
Washington	1,202,976	1,030,828
<u>Eastern Region</u>	4,667,274	1,093,714
Illinois	840,517	508,848
Indiana	*	*
Maine	21,168	16,373
Michigan	527,273	451,443
Minnesota	1,311,516	521,990
Missouri	503,435	233,432
New Hampshire	*	*
New York	*	*
Ohio	*	*
Pennsylvania	303,624	276,512
Vermont	47,434	43,634
West Virginia	*	*
Wisconsin	487,711	262,033

Table 6 - continued

<u>Region/State</u>	<u>Visitor Hours</u>	<u>± 95% Confidence Interval</u>
<u>Southern Region</u>	4,084,636	979,218
Alabama	125,450	121,024
Arkansas	492,452	277,783
Florida	787,620	533,807
Georgia	*	*
Kentucky	*	*
Louisiana	490,926	261,442
Mississippi	455,583	414,585
North Carolina	231,255	161,563
Oklahoma	111,046	77,557
South Carolina	298,817	217,447
Tennessee	*	*
Texas	484,482	309,771
Virginia	*	*
<u>Alaska Region</u>	31,857	12,701
<u>National Forest Total</u>	17,568,194	3,955,749

\*Sample size was considered too small for an accurate estimate or confidence interval was greater than the estimate.

Table 7. Estimated Number of Days Spent Hunting for Other Game on Forest Service Lands in 1985, in Total and by Forest Service Region.

<u>Region/State</u>	<u>Days</u>	<u>±95% Confidence Interval</u>
Northern, Rocky Mountain, and Intermountain Region	443,962	101,873
Southwestern Region	*	*
Pacific Southwest Region	*	*
Pacific Northwest Region	256,848	144,892
Eastern Region	435,811	185,146
Southern Region	494,142	203,098
Alaska Region	*	*
National Forest Total	1,954,319	422,198

\*Sample size was considered too small for an accurate estimate or confidence interval was greater than the estimate.

Table 8. Estimated Number of Visitor Hours Spent Hunting for Other Game on Forest Service Lands in 1985, in Total and by Forest Service Region.

<u>Region/State</u>	<u>Visitor Hours</u>	<u>±95% Confidence Interval</u>
Northern, Rocky Mountain, and Intermountain Region	2,052,539	527,017
Southwestern Region	*	*
Pacific Southwest Region	*	*
Pacific Northwest Region	1,271,842	660,441
Eastern Region	2,472,818	1,372,369
Southern Region	2,731,737	1,240,963
Alaska Region	*	*
National Forest Total	9,982,561	2,428,341

\*Sample size was considered too small for an accurate estimate or confidence interval was greater than the estimate.

Table 9. Estimated Number of Days Spent Hunting for all Types of Game on Forest Service Lands in 1985, in Total, by Forest Service Region, and by State.

<u>Region/State</u>	<u>Days</u>
<u>Northern, Rocky Mountain, and Intermountain Region</u>	4,967,655
Colorado	947,137
Idaho	1,165,879
Kansas	25,725
Montana	873,485
Nebraska	206,227
Nevada	124,804
North Dakota	266,877
South Dakota	505,618
Utah	455,463
Wyoming	396,437
<u>Southwestern Region</u>	1,421,355
Arizona	1,214,679
New Mexico	269,676
<u>Pacific Southwest Region</u>	1,845,068
California	1,845,068
<u>Pacific Northwest Region</u>	2,964,061
Oregon	1,149,970
Washington	1,814,090
<u>Eastern Region</u>	8,505,513
Illinois	344,376
Indiana	261,618
Maine	68,132
Michigan	1,861,015
Minnesota	960,403
Missouri	1,019,347
New Hampshire	327,643
New York	58,094
Ohio	300,930
Pennsylvania	969,848
Vermont	175,674
West Virginia	819,934
Wisconsin	1,338,493

Table 9 - continued

<u>Region/State</u>	<u>Days</u>
<u>Southern Region</u>	8,180,531
Alabama	413,669
Arkansas	1,169,891
Florida	1,001,441
Georgia	380,979
Kentucky	178,388
Louisiana	792,963
Mississippi	746,508
North Carolina	585,014
Oklahoma	119,631
South Carolina	400,119
Tennessee	320,606
Texas	407,665
Virginia	1,663,654
<u>Alaska Region</u>	45,804
<u>National Forest Total</u>	27,992,990

Table 10. Estimated Number of Visitor Hours Spent Hunting for all Types of Game on Forest Service Lands in 1985, in Total, by Forest Service Region, and by State.

<u>Region/State</u>	<u>Visitor Hours</u>
<u>Northern, Rocky Mountain, and Intermountain Region</u>	33,972,329
Colorado	7,253,288
Idaho	7,484,935
Kansas	144,542
Montana	5,471,733
Nebraska	1,430,768
Nevada	1,075,374
North Dakota	1,443,280
South Dakota	3,475,430
Utah	3,072,742
Wyoming	3,120,231
<u>Southwestern Region</u>	8,180,766
Arizona	6,442,176
New Mexico	1,738,590
<u>Pacific Southwest Region</u>	12,396,710
California	12,396,710
<u>Pacific Northwest Region</u>	17,916,420
Oregon	7,714,137
Washington	10,202,281
<u>Eastern Region</u>	48,793,923
Illinois	1,874,351
Indiana	1,642,045
Maine	299,804
Michigan	11,352,433
Minnesota	5,668,362
Missouri	5,121,681
New Hampshire	1,616,250
New York	390,341
Ohio	2,074,410
Pennsylvania	6,079,804
Vermont	907,024
West Virginia	5,397,748
Wisconsin	6,369,665



Table 10 - continued

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<u>Region/State</u>	<u>Visitor Hours</u>
<u>Southern Region</u>	48,343,784
Alabama	2,513,113
Arkansas	6,943,545
Florida	5,410,735
Georgia	2,085,954
Kentucky	1,063,798
Louisiana	4,415,046
Mississippi	4,197,780
North Carolina	3,703,684
Oklahoma	627,903
South Carolina	2,662,093
Tennessee	1,962,724
Texas	2,495,513
Virginia	10,261,890
<u>Alaska Region</u>	310,864
<u>National Forest Total</u>	169,914,797

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Table 11. Net Economic Value Per Day for Deer Hunting and Elk Hunting, by State Visited.

State	Deer Hunting		Elk Hunting	
	Net Economic Value	± 95% Confidence Interval	Net Economic Value	± 95% Confidence Interval
Alabama	28.28	10.38		
Alaska	*	*		
Arizona	34.06	6.04	39.81	16.12
Arkansas	30.88	8.87		
California	26.28	5.44		
Colorado	35.82	7.52	39.08	6.15
Florida	36.24	12.77		
Georgia	23.28	7.72		
Idaho	32.37	6.56	40.90	9.04
Illinois	*	*		
Indiana	21.59	18.73		
Kansas	*	*		
Kentucky	27.50	12.62		
Louisiana	33.60	9.61		
Maine	23.18	16.86		
Michigan	29.47	5.55		
Minnesota	33.90	9.47		
Mississippi	29.40	7.96		
Missouri	18.74	5.02		
Montana	25.31	6.88	39.92	7.82
Nebraska	*	*		
Nevada	42.88	16.08	*	*
New Hampshire	20.95	16.37		
New Mexico	34.62	8.39	27.52	11.88
New York	19.04	6.90		
North Carolina	26.90	8.47		
North Dakota	20.61	11.45		
Ohio	27.97	12.37		
Oklahoma	22.95	12.43		
Oregon	28.01	4.42	27.30	5.17
Pennsylvania	31.66	4.13		
South Carolina	22.51	6.96		
South Dakota	29.62	11.53	*	*
Tennessee	25.95	6.22		
Texas	18.06	3.12		

Table 11 - continued

<u>State</u>	<u>Deer Hunting</u>		<u>Elk Hunting</u>	
	<u>Net Economic Value</u>	<u>± 95% Confidence Interval</u>	<u>Net Economic Value</u>	<u>± 95% Confidence Interval</u>
Utah	32.08	6.09	29.65	7.03
Vermont	33.43	19.22		
Virginia	26.06	5.69		
Washington	23.03	5.48	30.65	12.52
West Virginia	27.23	9.17		
Wisconsin	34.91	5.78		
Wyoming	32.97	10.18	44.06	10.73

\*Sample size was considered too small for an accurate estimate.

Table 12. Net Economic Value Per Day for Deer Hunting and Elk Hunting, by Forest Service Region Visited.

<u>Forest Service Regions</u>	<u>Deer Hunting</u>		<u>Elk Hunting</u>	
	<u>Net Economic Value</u>	<u>± 95% Confidence Interval</u>	<u>Net Economic Value</u>	<u>± 95% Confidence Interval</u>
Northern, Rocky Mountain, and Intermountain	31.34	2.95	39.42	3.67
Southwestern	34.25	4.88	34.27	10.41
Pacific Southwest	26.28	5.44		
Pacific Northwest	26.27	3.46	28.34	5.25
Eastern	28.39	2.24		
Southern	28.31	2.59		
Alaska	*	*		

\*Sample size was considered too small for an accurate estimate.

Table 13. Net Economic Value Per Day for Waterfowl Hunting, by State Visited.

State	Waterfowl Hunting	
	Net Economic Value	± 95% Confidence Interval
Alabama	*	*
Alaska	*	*
Arizona	*	*
Arkansas	39.76	15.85
California	42.61	9.87
Colorado	*	*
Florida	47.83	12.94
Georgia	*	*
Idaho	23.33	11.83
Illinois	17.03	6.68
Indiana	*	*
Kansas	*	*
Kentucky	*	*
Louisiana	21.52	7.89
Maine	*	*
Michigan	25.63	5.29
Minnesota	30.17	10.82
Mississippi	*	*
Missouri	22.57	6.00
Montana	*	*
Nebraska	*	*
Nevada	*	*
New Hampshire	*	*
New Mexico	*	*
New York	*	*
North Carolina	*	*
North Dakota	*	*
Ohio	*	*
Oklahoma	*	*
Oregon	33.52	21.09
Pennsylvania	17.31	5.34
South Carolina	*	*
South Dakota	*	*
Tennessee	*	*
Texas	29.32	11.44

Table 13 - continued

<u>State</u>	<u>Waterfowl Hunting</u>	
	<u>Net Economic Value</u>	<u>± 95% Confidence Interval</u>
Utah	18.59	10.53
Vermont	*	*
Virginia	*	*
Washington	*	*
West Virginia	*	*
Wisconsin	7.86	4.13
Wyoming	*	*

\*Sample size was considered too small for an accurate estimate.

Table 14. Net Economic Value Per Day for Waterfowl Hunting, by Forest Service Region Visited.

<u>Forest Service Regions</u>	<u>Waterfowl Hunting</u>	
	<u>Net Economic Value</u>	<u>± 95% Confidence Interval</u>
Northern, Rocky Mountain, and Intermountain	20.78	5.07
Southwestern	*	*
Pacific Southwest	42.61	9.87
Pacific Northwest	42.42	18.06
Eastern	21.28	3.43
Southern	31.46	5.10
Alaska	*	*

\*Sample size was considered too small for an accurate estimate.

Table 15. Estimated Number of Days Spent Hunting for Deer and Elk on Forest Service Lands in 1985, in Total, by Forest Service Region, and by State.

<u>Region/State</u>	<u>Deer Days</u>	<u>±95% Confidence Interval</u>	<u>Elk Days</u>	<u>±95% Confidence Interval</u>
<u>Northern, Rocky Mountain, and Intermountain Region</u>	2,122,381	171,299	1,182,392	89,920
Colorado	366,777	59,317	392,385	63,458
Idaho	548,087	88,925	313,202	50,816
Kansas	-	-	-	-
Montana	445,469	65,863	353,414	52,253
Nebraska	-	-	-	-
Nevada	15,941	2,629	-	-
North Dakota	77,716	26,500	-	-
South Dakota	230,207	62,753	-	-
Utah	269,878	36,840	27,606	3,768
Wyoming	124,975	34,602	94,342	26,120
<u>Southwestern Region</u>	460,248	114,407	35,499	9,614
Arizona	318,379	88,181	22,952	6,357
New Mexico	141,869	61,076	12,547	5,402
<u>Pacific Southwest Region</u>	602,165	172,904	-	-
California	602,165	172,904	-	-
<u>Pacific Northwest Region</u>	1,324,554	166,816	499,244	63,829
Oregon	568,419	83,864	226,059	33,353
Washington	756,135	139,888	273,185	50,540
<u>Eastern Region</u>	3,987,808	503,439	-	-
Illinois	-	-	-	-
Indiana	96,476	54,414	-	-
Maine	38,750	17,351	-	-
Michigan	1,032,727	244,280	-	-
Minnesota	281,607	123,409	-	-
Missouri	427,044	122,991	-	-
New Hampshire	177,342	164,838	-	-
New York	27,732	26,544	-	-
Ohio	132,371	59,530	-	-
Pennsylvania	547,396	211,108	-	-
Vermont	80,495	19,962	-	-
West Virginia	460,157	129,227	-	-
Wisconsin	666,263	246,054	-	-



Table 15 (continued)

<u>Region/State</u>	<u>Deer Days</u>	<u>±95% Confidence Interval</u>	<u>Elk Days</u>	<u>±95% Confidence Interval</u>
<u>Southern Region</u>	4,127,417	628,835		
Alabama	230,774	84,839		
Arkansas	511,486	166,080		
Florida	524,977	373,121		
Georgia	313,432	170,597		
Kentucky	54,019	27,324		
Louisiana	319,361	103,753		
Mississippi	396,190	130,590		
North Carolina	335,049	111,472		
Oklahoma	39,051	22,796		
South Carolina	242,780	109,702		
Tennessee	113,182	46,094		
Texas	129,479	95,829		
Virginia	917,637	309,582		
<u>Alaska Region</u>				
National Forest Total	12,631,666	845,084	1,717,135	114,880

- Net economic value per day could not be estimated because of small sample size, thus days hunted was not necessary for calculation of total value.

Table 16. Estimated Number of Days Spent Hunting for Waterfowl on Forest Service Lands in 1985, in Total, by Forest Service Region, and by State.

<u>Region/State</u>	<u>Waterfowl Days</u>	<u>±95% Confidence Interval</u>
<u>Northern, Rocky Mountain, and Intermountain Region</u>	361,819	88,728
Colorado	-	-
Idaho	103,734	46,244
Kansas	-	-
Montana	-	-
Nebraska	-	-
Nevada	-	-
North Dakota	-	-
South Dakota	-	-
Utah	33,085	20,247
Wyoming	-	-
<u>Southwestern Region</u>	-	-
Arizona	-	-
New Mexico	-	-
<u>Pacific Southwest Region</u>	204,346	118,374
California	204,346	118,374
<u>Pacific Northwest Region</u>	209,365	149,802
Oregon	46,807	19,219
Washington	-	-
<u>Eastern Region</u>	636,262	171,345
Illinois	108,268	70,686
Indiana	-	-
Maine	-	-
Michigan	49,329	36,850
Minnesota	186,389	83,820
Missouri	63,935	27,866
New Hampshire	-	-
New York	-	-
Ohio	-	-
Pennsylvania	27,438	20,006
Vermont	-	-
West Virginia	-	-
Wisconsin	124,485	111,328

Table 16 (continued)

<u>Region/State</u>	<u>Waterfowl Days</u>	<u>±95% Confidence Interval</u>
<u>Southern Region</u>	485,904	128,728
Alabama	-	-
Arkansas	95,489	55,456
Florida	110,655	89,066
Georgia	-	-
Kentucky	-	-
Louisiana	74,536	36,314
Mississippi	-	-
North Carolina	-	-
Oklahoma	-	-
South Carolina	-	-
Tennessee	-	-
Texas	37,538	18,448
Virginia	-	-
<u>Alaska Region</u>	-	-
National Forest Total	1,990,541	314,675

- Net economic value per day could not be estimated because of small sample size, thus days hunted was not necessary for calculation of total value.

Table 17. Estimated Net Value (above current costs) of Deer Hunting on Forest Service Lands, in Total, by Forest Service Region, and by State.

Region/State	Net Economic Value <sup>a</sup>	± 95% Confidence Interval
	(in thousands of dollars)	
<u>Northern, Rocky Mountain, and Intermountain Region</u>	66,515	6,261
Colorado	13,138	2,758
Idaho	17,742	3,595
Kansas	*	*
Montana	11,275	3,065
Nebraska	*	*
Nevada	683	256
North Dakota	1,602	890
South Dakota	6,819	2,654
Utah	8,658	1,643
Wyoming	4,120	1,272
<u>Southwestern Region</u>	15,763	2,246
Arizona	10,844	1,923
New Mexico	4,911	1,190
<u>Pacific Southwest Region</u>	15,825	3,276
California	15,825	3,276
<u>Pacific Northwest Region</u>	34,796	4,583
Oregon	15,921	2,512
Washington	17,414	4,144
<u>Eastern Region</u>	113,214	8,933
Illinois	*	*
Indiana	2,083	1,807
Maine	898	653
Michigan	30,434	5,732
Minnesota	9,546	2,667
Missouri	8,003	2,144
New Hampshire	3,715	2,903
New York	528	191
Ohio	3,702	1,637
Pennsylvania	17,330	2,261
Vermont	2,691	1,547
West Virginia	12,530	4,220
Wisconsin	23,259	3,851

Table 17 (continued)

<u>Region/State</u>	<u>Net Economic Value<sup>a</sup></u>	<u>± 95% Confidence Interval</u> <u>(in thousands of dollars)</u>
<u>Southern Region</u>	116,847	10,690
Alabama	6,526	2,395
Arkansas	15,795	4,537
Florida	19,025	6,704
Georgia	7,297	2,420
Kentucky	1,485	682
Louisiana	10,730	3,069
Mississippi	11,648	3,154
North Carolina	9,013	2,838
Oklahoma	896	485
South Carolina	5,465	1,690
Tennessee	2,937	704
Texas	2,338	404
Virginia	23,914	5,221
<u>Alaska Region</u>	*	*
National Forest Total	365,434	31,987

<sup>a</sup>Total net value was calculated by expanding the cost per day (and its associated 95% confidence interval) by the estimated number of days in that region or state.

\*Sample size was considered too small for an accurate estimate.

Table 18. Estimated Net Value (above current costs) of Elk Hunting on Forest Service Lands, in Total, by Forest Service Region, and by State.

<u>Region/State</u>	<u>Net Economic Value<sup>a</sup></u>	<u>± 95% Confidence Interval</u>
	<u>(in thousands of dollars)</u>	
<u>Northern, Rocky Mountain, and Intermountain Region</u>	46,610	4,339
Colorado	15,334	2,413
Idaho	12,810	2,831
Kansas		
Montana	14,108	2,764
Nabraska		
Nevada	*	*
North Dakota		
South Dakota	*	*
Utah	818	194
Wyoming	4,157	1,012
<u>Southwestern Region</u>	1,216	369
Arizona	914	370
New Mexico	345	149
<u>Pacific Southwest Region</u>		
California		
<u>Pacific Northwest Region</u>	14,149	2,621
Oregon	6,171	1,169
Washington	8,373	3,420
<u>Eastern Region</u>		
Illinois		
Indiana		
Maine		
Michigan		
Minnesota		
Missouri		
New Hampshire		
New York		
Ohio		
Pennsylvania		
Vermont		
West Virginia		
Wisconsin		

Table 18 (continued)

<u>Region/State</u>	<u>Net Economic Value<sup>a</sup></u>	<u>± 95% Confidence Interval</u> <u>(in thousands of dollars)</u>
<u>Southern Region</u>		
Alabama		
Arkansas		
Florida		
Georgia		
Kentucky		
Louisiana		
Mississippi		
North Carolina		
Oklahoma		
South Carolina		
Tennessee		
Texas		
Virginia		
<u>Alaska Region</u>		
National Forest Total	62,504	5,069

<sup>a</sup>Total net value was calculated by expanding the cost per day (and its associated 95% confidence interval) by the estimated number of days in that region or state.

\*Sample size was considered too small for an accurate estimate.

Table 19. Estimated Net Value (above current costs) of Waterfowl Hunting on Forest Service Lands, in Total, by Forest Service Region, and by State.

<u>Region/State</u>	<u>Net Economic Value<sup>a</sup></u>	<u>± 95% Confidence Interval</u>
	<u>(in thousands of dollars)</u>	
<u>Northern, Rocky Mountain, and Intermountain Region</u>	7,519	1,834
Colorado	*	*
Idaho	2,420	1,227
Kansas	*	*
Montana	*	*
Nebraska	*	*
Nevada	*	*
North Dakota	*	*
South Dakota	*	*
Utah	615	348
Wyoming	*	*
<u>Southwestern Region</u>	*	*
Arizona	*	*
New Mexico	*	*
<u>Pacific Southwest Region</u>	8,707	2,017
California	8,707	2,017
<u>Pacific Northwest Region</u>	8,881	3,781
Oregon	1,588	987
Washington	*	*
<u>Eastern Region</u>	13,540	2,182
Illinois	1,844	723
Indiana	*	*
Maine	*	*
Michigan	1,267	261
Minnesota	5,623	2,017
Missouri	1,443	384
New Hampshire	*	*
New York	*	*
Ohio	*	*
Pennsylvania	475	146
Vermont	*	*
West Virginia	*	*
Wisconsin	978	514



Table 19 (continued)

<u>Region/State</u>	<u>Net Economic Value<sup>a</sup></u>	<u>± 95% Confidence Interval</u> (in thousands of dollars)
<u>Southern Region</u>	15,286	2,478
Alabama	*	*
Arkansas	3,797	1,513
Florida	5,293	1,432
Georgia	*	*
Kentucky	*	*
Louisiana	1,604	588
Mississippi	*	*
North Carolina	*	*
Oklahoma	*	*
South Carolina	*	*
Tennessee	*	*
Texas	1,101	429
Virginia	*	*
<u>Alaska Region</u>	*	*
National Forest Total	53,705	5,041

<sup>a</sup>Total net value was calculated by expanding the cost per day (and its associated 95% confidence interval) by the estimated number of days in that region or state.

\*Sample size was considered too small for an accurate estimate.

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**APPENDIX A**

Illustrative portions of Form FH-3 of the 1985 National Survey  
of Fishing, Hunting, and Wildlife-associated Recreation

**Section I HUNTING (BIG GAME)****Part A — PARTICIPATION — Continued****CHECK  
ITEM C**

Refer to item 2, page 2

Did respondent hunt big game in the U.S.  
in 1985?

0091

1 ☐ Yes2 ☐ No — Skip to Check Item G, page 7INTERVIEWER: Refer to the big game column items 4—5, page 3. Enter in item 7 the region numbers from 4 and 5c.  
Then ask items 7a—t for each of the places listed in item 7.

	PLACE 1	PLACE 2	PLACE 3	PLACE 4	PLACE 5
<b>7. REGION</b> →	0092 <input type="text"/>	0105 <input type="text"/>	0118 <input type="text"/>	0131 <input type="text"/>	0144 <input type="text"/>
<b>SHOW MAP OF REGION</b> Now I'm going to ask about region ... in State ...					
<b>7a. In 1985, did you take any trips to region (Number) for the primary purpose of scouting for big game?</b>	0093 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No — Skip to 7c	0106 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No — Skip to 7c	0119 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No — Skip to 7c	0132 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No — Skip to 7c	0145 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No — Skip to 7c
<b>b. On how many different days did you scout for big game?</b>	0094 Days	0107 Days	0120 Days	0133 Days	0146 Days
<b>c. In 1985, how many trips did you take to (Region) to HUNT big game?</b>	0095 Trips	0108 Trips	0121 Trips	0134 Trips	0147 Trips
<b>CHECK ITEM D</b> Does entry in 7c = 1?	0096 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No — Skip to 7e	0109 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No — Skip to 7e	0122 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No — Skip to 7e	0135 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No — Skip to 7e	0148 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No — Skip to 7e
<b>7d. Was this a one-day trip, that is, a trip on which you went and returned on the same day?</b>	0097 X1 <input type="checkbox"/> Yes <input type="checkbox"/> No — How many days was it? } Skip to 7h Days	0110 X1 <input type="checkbox"/> Yes <input type="checkbox"/> No — How many days was it? } Skip to 7h Days	0123 X1 <input type="checkbox"/> Yes <input type="checkbox"/> No — How many days was it? } Skip to 7h Days	0136 X1 <input type="checkbox"/> Yes <input type="checkbox"/> No — How many days was it? } Skip to 7h Days	0149 X1 <input type="checkbox"/> Yes <input type="checkbox"/> No — How many days was it? } Skip to 7h Days
<b>e. Of these, how many were one-day trips, that is, trips on which you went and returned the same day?</b>	0098 1-day trips 0 <input type="checkbox"/> None	0111 1-day trips 0 <input type="checkbox"/> None	0124 1-day trips 0 <input type="checkbox"/> None	0137 1-day trips 0 <input type="checkbox"/> None	0150 1-day trips 0 <input type="checkbox"/> None
<b>CHECK ITEM E</b> Does entry in 7e = 7c?	0099 1 <input type="checkbox"/> Yes — Skip to 7h 2 <input type="checkbox"/> No	0112 1 <input type="checkbox"/> Yes — Skip to 7h 2 <input type="checkbox"/> No	0125 1 <input type="checkbox"/> Yes — Skip to 7h 2 <input type="checkbox"/> No	0138 1 <input type="checkbox"/> Yes — Skip to 7h 2 <input type="checkbox"/> No	0151 1 <input type="checkbox"/> Yes — Skip to 7h 2 <input type="checkbox"/> No
<b>7f. How many were 2-day trips (involving one over- night stay)?</b>	0100 2-day trips 0 <input type="checkbox"/> None	0113 2-day trips 0 <input type="checkbox"/> None	0126 2-day trips 0 <input type="checkbox"/> None	0139 2-day trips 0 <input type="checkbox"/> None	0152 2-day trips 0 <input type="checkbox"/> None
<b>CHECK ITEM F</b> Do entries in 7e + 7f = 7c?	0101 1 <input type="checkbox"/> Yes — Skip to 7h 2 <input type="checkbox"/> No	0114 1 <input type="checkbox"/> Yes — Skip to 7h 2 <input type="checkbox"/> No	0127 1 <input type="checkbox"/> Yes — Skip to 7h 2 <input type="checkbox"/> No	0140 1 <input type="checkbox"/> Yes — Skip to 7h 2 <input type="checkbox"/> No	0153 1 <input type="checkbox"/> Yes — Skip to 7h 2 <input type="checkbox"/> No
<b>7g. How many were 3-days or longer?</b>	0102 3-day trips or longer	0115 3-day trips or longer	0128 3-day trips or longer	0141 3-day trips or longer	0154 3-day trips or longer
<b>h. On how many different days did you actually hunt big game in (Region) in 1985?</b>	0103 Days	0116 Days	0129 Days	0142 Days	0155 Days
<b>i. On how many of those days were you hunting CHIEFLY for big game rather than some other kind of hunting?</b>	0104 Days 0 <input type="checkbox"/> None	0117 Days 0 <input type="checkbox"/> None	0130 Days 0 <input type="checkbox"/> None	0143 Days 0 <input type="checkbox"/> None	0156 Days 0 <input type="checkbox"/> None

# Section I HUNTING (BIG GAME) — Continued

## Part A — PARTICIPATION — Continued

INTERVIEWER: Refer to item 2, page 2.

0157

- 1 ☐ Respondent hunted MORE THAN ONE kind of big game — Ask 7j  
 2 ☐ Respondent hunted ONLY ONE kind of big game — Enter code for that kind in item 7j without asking. If region is not in Alaska, skip to item 7m. If region is in Alaska, skip to item 7l.

### SHOW FLASHCARD A

7j. What kinds of big game did you hunt in (Region)? Enter all codes that apply

NOTE — If Alaska or Hawaii, refer to item 2, page 2 for codes.

- 1 — Deer  
 2 — Elk  
 3 — Antelope  
 4 — Moose  
 5 — Bear  
 6 — Wild turkey  
 7 — Other

For each species ask:

k. On how many different days did you hunt (Species) in (Region)?

NOTE — If region is in Alaska, ask 7l for each species. Otherwise skip to 7m.

PLACE 1			PLACE 2			PLACE 3			PLACE 4			PLACE 5		
Code 7j.	No. of days 7k.	No. bagged 7l.	Code 7j.	No. of days 7k.	No. bagged 7l.	Code 7j.	No. of days 7k.	No. bagged 7l.	Code 7j.	No. of days 7k.	No. bagged 7l.	Code 7j.	No. of days 7k.	No. bagged 7l.
0158	0159	0160	0161	0162	0163	0164	0165	0166	0167	0168	0169	0170	0171	0172
0173	0174	0175	0176	0177	0178	0179	0180	0181	0182	0183	0184	0185	0186	0187
0188	0189	0190	0191	0192	0193	0194	0195	0196	0197	0198	0199	0200	0201	0202
0203	0204	0205	0206	0207	0208	0209	0210	0211	0212	0213	0214	0215	0216	0217
0218	0219	0220	0221	0222	0223	0224	0225	0226	0227	0228	0229	0230	0231	0232
0233	0234	0235	0236	0237	0238	0239	0240	0241	0242	0243	0244	0245	0246	0247
0248	0249	0250	0251	0252	0253	0254	0255	0256	0257	0258	0259	0260	0261	0262
0263	0264	0265	0266	0267	0268	0269	0270	0271	0272	0273	0274	0275	0276	0277
0278	0279	0280	0281	0282	0283	0284	0285	0286	0287	0288	0289	0290	0291	0292

l. How many (Species) did you bag?

	PLACE 1	PLACE 2	PLACE 3	PLACE 4	PLACE 5
m. What was the average number of hours per day that you hunted big game on (this trip/these trips)?	0293 Hours	0297 Hours	0301 Hours	0305 Hours	0309 Hours
n. Approximately how many miles is it one way to the place you USUALLY hunted big game in (Region)?	0294 Miles X6 <input type="checkbox"/> Less than 1 mile X7 <input type="checkbox"/> Don't know	0298 Miles X6 <input type="checkbox"/> Less than 1 mile X7 <input type="checkbox"/> Don't know	0302 Miles X6 <input type="checkbox"/> Less than 1 mile X7 <input type="checkbox"/> Don't know	0306 Miles X6 <input type="checkbox"/> Less than 1 mile X7 <input type="checkbox"/> Don't know	0310 Miles X6 <input type="checkbox"/> Less than 1 mile X7 <input type="checkbox"/> Don't know
Refer to 7c. If only one trip was reported, ask o. Otherwise skip to p.	0295	0299	0303	0307	0311
o. Was this trip PRIMARILY for hunting big game?	1 <input type="checkbox"/> Yes } Skip to 7q 2 <input type="checkbox"/> No }	1 <input type="checkbox"/> Yes } Skip to 7q 2 <input type="checkbox"/> No }	1 <input type="checkbox"/> Yes } Skip to 7q 2 <input type="checkbox"/> No }	1 <input type="checkbox"/> Yes } Skip to 7q 2 <input type="checkbox"/> No }	1 <input type="checkbox"/> Yes } Skip to 7q 2 <input type="checkbox"/> No }
p. Of the (Number in 7c) trips you took to (Region) how many were primarily for hunting big game?	0296 Trips 0 <input type="checkbox"/> None	0300 Trips 0 <input type="checkbox"/> None	0304 Trips 0 <input type="checkbox"/> None	0308 Trips 0 <input type="checkbox"/> None	0312 Trips 0 <input type="checkbox"/> None

**Section I HUNTING (BIG GAME) – Continued****Part A – PARTICIPATION – Continued**

**7q. Did you do any big game hunting in (Region) on privately-owned land?**

PLACE 1	PLACE 2	PLACE 3	PLACE 4	PLACE 5
0313 X2 <input type="checkbox"/> No – Go to 7r <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0321 X2 <input type="checkbox"/> No – Go to 7r <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0329 X2 <input type="checkbox"/> No – Go to 7r <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0337 X2 <input type="checkbox"/> No – Go to 7r <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0345 X2 <input type="checkbox"/> No – Go to 7r <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know

**r. Did you do any big game hunting in (Region) on publicly-owned land; that is, on land owned by the State, local, or Federal government?**

PLACE 1	PLACE 2	PLACE 3	PLACE 4	PLACE 5
0314 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Don't know } Skip to 7t	0322 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Don't know } Skip to 7t	0330 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Don't know } Skip to 7t	0338 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Don't know } Skip to 7t	0346 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> Don't know } Skip to 7t

**SHOW FLASHCARD B**

**s. Did you do any big game hunting in (Region) –**

**(1) On Federal land such as National forests, wildlife refuges, etc.?**

PLACE 1	PLACE 2	PLACE 3	PLACE 4	PLACE 5
0315 X2 <input type="checkbox"/> No – Go to 7s(2) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0323 X2 <input type="checkbox"/> No – Go to 7s(2) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0331 X2 <input type="checkbox"/> No – Go to 7s(2) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0339 X2 <input type="checkbox"/> No – Go to 7s(2) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0347 X2 <input type="checkbox"/> No – Go to 7s(2) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know

**(2) In a State wildlife management area or on a State wildlife refuge?**

PLACE 1	PLACE 2	PLACE 3	PLACE 4	PLACE 5
0316 X2 <input type="checkbox"/> No – Go to 7s(3) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0324 X2 <input type="checkbox"/> No – Go to 7s(3) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0332 X2 <input type="checkbox"/> No – Go to 7s(3) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0340 X2 <input type="checkbox"/> No – Go to 7s(3) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0348 X2 <input type="checkbox"/> No – Go to 7s(3) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know

**(3) In other State-owned areas, such as State parks and forests?**

PLACE 1	PLACE 2	PLACE 3	PLACE 4	PLACE 5
0317 X2 <input type="checkbox"/> No – Go to 7s(4) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0325 X2 <input type="checkbox"/> No – Go to 7s(4) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0333 X2 <input type="checkbox"/> No – Go to 7s(4) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0341 X2 <input type="checkbox"/> No – Go to 7s(4) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0349 X2 <input type="checkbox"/> No – Go to 7s(4) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know

**(4) In areas owned by local government?**

PLACE 1	PLACE 2	PLACE 3	PLACE 4	PLACE 5
0318 X2 <input type="checkbox"/> No – Go to 7s(5) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0326 X2 <input type="checkbox"/> No – Go to 7s(5) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0334 X2 <input type="checkbox"/> No – Go to 7s(5) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0342 X2 <input type="checkbox"/> No – Go to 7s(5) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0350 X2 <input type="checkbox"/> No – Go to 7s(5) <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know

**(5) On public land that you are unable to say whether State, local, or federally-owned?**

PLACE 1	PLACE 2	PLACE 3	PLACE 4	PLACE 5
0319 X2 <input type="checkbox"/> No – Go to 7t <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0327 X2 <input type="checkbox"/> No – Go to 7t <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0335 X2 <input type="checkbox"/> No – Go to 7t <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0343 X2 <input type="checkbox"/> No – Go to 7t <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know	0351 X2 <input type="checkbox"/> No – Go to 7t <input type="checkbox"/> Yes How many days? _____ days X7 <input type="checkbox"/> Don't know

**t. Of the (Number of days in 7h) days you actually hunted big game in (Region), how many involved hunting in or on wetlands? By wetlands I mean marshes, swamps, potholes, bogs, small lakes or ponds surrounded by wetland vegetation, or bottomlands that are sometimes flooded. Exclude open bodies of water 10 acres or more.**

PLACE 1	PLACE 2	PLACE 3	PLACE 4	PLACE 5
0320 _____ Days Go to next column.	0328 _____ Days Go to next column.	0336 _____ Days Go to next column.	0344 _____ Days Go to next column.	0352 _____ Days Go to Check Item G, page 7.



# Section I HUNTING — Continued

## Part C — ECONOMIC EVALUATION (DEER)

HECK  
EMS

Did respondent hunt for deer?  
(Code 1, 8, or 17 in item 2A)

1171

- 1 ☐ Yes  
2 ☐ No — Skip to Check Item T, page 21

3a. Now I would like to ask you a few questions about your deer hunting last year. In total, how many trips did you take to hunt deer in 1985?

1172

\_\_\_\_\_ Trips

b. Did you personally bag one or more deer in 1985?

1173

- 1 ☐ Yes  
2 ☐ No

c. Think about what it cost you for a TYPICAL deer hunting trip last year. Include your expenses for such things as gasoline and other transportation costs, food, lodging, ammunition, and equipment rentals. If you went deer hunting with family or friends, include ONLY YOUR SHARE of the costs.

Keeping all those expenses in mind, how much did a typical deer hunting trip cost you, on average, in 1985?

1174

\$ \_\_\_\_\_ .00 per trip

0 ☐ None — Skip to 13j

d. Now suppose the cost of your deer hunting trips last year had been significantly higher, but the cost per trip for other kinds of hunting, fishing, and recreational activities had not changed.

If your costs for a typical deer hunting trip had been \$(3 × the amount in c) per trip, would you still have gone deer hunting in 1985?

1175

- 1 ☐ Yes  
2 ☐ No — Skip to 13h

e. At \$(3 × the amount in c) per trip, how many deer hunting trips would you have taken in 1985?

1176

\_\_\_\_\_ Trips

f. If your deer hunting trips had cost you an average of \$(4 × the amount in c) per trip, would you still have gone deer hunting in 1985? Remember, the cost per trip for other kinds of hunting, fishing, and recreational activities would not have changed.

1177

- 1 ☐ Yes  
2 ☐ No — Skip to 13j

g. At \$(4 × the amount in c) per trip, how many deer hunting trips would you have taken in 1985?

1178

\_\_\_\_\_ Trips — Skip to 13j

h. If your deer hunting trips had cost you an average of \$(2 × the amount in c) per trip, would you still have gone deer hunting in 1985? Remember, the cost per trip for other kinds of hunting, fishing, and recreational activities would not have changed.

1179

- 1 ☐ Yes  
2 ☐ No — Skip to 13j

i. At \$(2 × the amount in c) per trip, how many deer hunting trips would you have taken in 1985?

1180

\_\_\_\_\_ Trips

j. What is the most your deer hunting could have cost you per trip last year before you would not have gone deer hunting at all in 1985, not even one trip, because it would have been too expensive? Remember, the cost per trip of other kinds of hunting, fishing, and recreational activities would not have changed.

1181

\$ \_\_\_\_\_ .00 per trip

x5 ☐ No limit — Skip to Check Item T, page 21

k. If deer hunting had been so expensive that you did not go deer hunting at all, what would you have done instead?

1182

- 1 ☐ Other big game hunting  
2 ☐ Other hunting  
3 ☐ Fishing  
4 ☐ Other outdoor recreation  
5 ☐ Work  
6 ☐ Don't know  
7 ☐ Other